

REMARKS

Favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claim 1 has been rewritten as new claim 22 to more particularly point out and distinctly claim the subject matter of the invention.

Support for the amendment is as follows:

discoloration of a photochromic time-temperature indicator (TTI) (page 9, lines 1-5)

a light source for generating predetermined incident light (original claim 9)

a detector for detecting the light response of the TTI to the incident light by measuring the degree of discoloration (original claim 9 and page 9, lines 1-5)

a control unit to which the spectral properties of the incident light beam and the collected emitted light are transferred to (page 8, lines 1-14). The control unit translates the data and generates a measured data corresponding to the condition of the TTI (original claim 13).

Claims 23-36 have been added corresponding to former claims 5-14 and 16-19, respectively.

Turning to the Official Action, claims 5-11 are objected to on the basis of informalities.

The objected to claims have been cancelled without prejudice and replaced with new claims which do not depend on a cancelled claim.

Accordingly, the objection to claims 5-11 based upon informalities is deemed to be overcome.

Claim 1 is objected to on the basis of an informality.

Claim 1 has been rewritten as new claim 22 and omits the informality noted by the Examiner.

Accordingly, this ground of objection is deemed to be overcome.

Claims 1, 5 and 9 are rejected under 35 USC 102 as anticipated by Haarer et al., U.S. Patent No. 7,081,364. This ground of rejection is respectfully traversed as applied to the new claims.

The device according to new claim 22 comprises a light source, a detector and a control unit. Please see Figure 1. This specific device is not disclosed in the cited reference.

Accordingly, this ground of rejection is deemed to be overcome by the new claims presented.

Claims 16-19 are rejected under 35 USC 103 as unpatentable over Simons, U.S. Patent No. 6,514,462 in view of Tamura, U.S. Patent No. 6,382,125. This ground of rejection is deemed to be overcome in view of the new claims presented.

Claims 16-19 have been rewritten as new claims 33-36, respectively and incorporate the device according to new claim 22. The cited references fail to disclose or suggest the subject matter of new claims 33-36 including a device according to new claim 22.

Accordingly, this ground of rejection is deemed to be overcome.

The Examiner is requested to note that the “whereby” and “thereby” terminology has been removed from the wording of the new claims.

Lastly, claims 1, 5-9, 11-14 and 16-19 are rejected under 35 USC 103 as unpatentable over Tamura in view of Lawandy, U.S. Patent Publication No. 20030174263. This ground of rejection is deemed to be overcome in view of the new claims represented.

Tamura provides an irreversible time temperature indicator (column 1, line 60). It changes its color at a certain temperature and does not return to its original color (column 1, line 30). The color is changed according to crystalline or non-crystalline state, or phase separation (claim 1). The glass transition temperature of the TTI must be high enough so that the TTI does not develop a color in the normal time upon loading the object of control into a truck (short warming up), column 8, line 23.

The Examiner correctly states that Tamura does not teach that the label could comprise photochromic material.

The Examiner alleges that Lawandy discloses a label in the field of Applicant’s endeavor. The Applicant respectfully disagrees.

Reading the disclosure of the technical field (paragraph 0002) the teaching of Lawandy relates to the use of thermotropic liquid crystals in reversibly contrasting information carrying

systems. Even if the thermotropic liquid crystal is applied over a background that contains a photochromic material (Fig. 2 of U.S. 20030174263), the disclosed device is neither the same nor even similar to the claimed photochromic TTI device because the device of Lawandy does not work without the liquid crystal layer.

When stimulated by heat or light the liquid crystal of Lawandy diffracts light and causes a color change. The background having a photochromic material is transparent at ambient temperature. After stimulation with heat or light, the Lawandy system exhibits a high degree of contrast at a wavelength where the liquid crystal is tuned (see column 3, paragraph 0031). This clearly shows that a change in the direction of the light that passes through the liquid crystal is responsible for providing a change in the background contrast.

The new claims clearly state that the form of detection is based on absorption of incident light and emission of a light response, and not on reflection or diffraction. U.S. 20030174263 is dedicated to the detection of a diffraction signal formed by the liquid crystal. There is no or suggestion of monitoring the emitted light response of a photochromic indicator.

Accordingly this ground of rejection is deemed to be untenable as applied to the new claims.

It is noted that claim 10 was further rejected under 35 USC 103 as unpatentable over Tamura, Lawandy and Zalameda et al. However, this ground of rejection is untenable as applied to the new claims for the reasons set forth.

In view of the foregoing, it is believed that each ground of rejection set forth in the Official Action has been overcome, and that the application is now in condition for allowance. Accordingly, such allowance is solicited.

Respectfully submitted,
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